

**Unclassified Publications  
of Lincoln Laboratory  
1 January — 31 December 1998**

**Volume 24**

**31 December 1998**

---

**Lincoln Laboratory**

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

*LEXINGTON, MASSACHUSETTS*



---

Prepared under Air Force Contract F19628-95-C-0002.

19990519 079

**Approved for public release; distribution is unlimited.**

**UNCLASSIFIED PUBLICATIONS**  
**OF**  
**LINCOLN LABORATORY**  
**1 JANUARY — 31 DECEMBER 1998**

**VOLUME 24**

*Compiled by*  
**PATRICIA A. MEANS**  
**ROBERT C. SEIDEL**

**31 DECEMBER 1998**

**ISSUED 12 MAY 1999**

Requests for information should be directed to:  
Lincoln Laboratory  
Massachusetts Institute of Technology  
244 Wood Street  
Lexington, Massachusetts 02420-9108  
ATTENTION: Report Distribution Office, L-345

Approved for public release; distribution is unlimited.

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

**LEXINGTON**

**MASSACHUSETTS**

This report is based on studies performed at Lincoln Laboratory, a center for research operated by Massachusetts Institute of Technology. The work was sponsored by the Department of the Air Force under Contract F19628-95-C-0002; in some cases, the work was supported under other contracts.

This report may be reproduced to satisfy needs of U.S. Government agencies.

The ESC Public Affairs Office has reviewed this report, and it is releasable to the National Technical Information Service, where it will be available to the general public, including foreign nationals.

This technical report has been reviewed and is approved for publication.

FOR THE COMMANDER

  
Gary Tutungian  
Administrative Contracting Officer  
Contracted Support Management

## FOREWORD

Volume 24 of *Unclassified Publications of Lincoln Laboratory* lists reports published from 1 January to 31 December 1998, as well as updated information on earlier publications.

Documents listed herein are generally no longer available from Lincoln Laboratory. Qualified Defense Technical Information Center (DTIC) users may purchase copies through normal DTIC channels. Others may purchase photocopies or microfiche from the U.S. Department of Commerce, National Technical Information Service, Springfield, Virginia 22161. When ordering, the six-digit AD number should be cited.

Subscriptions of the *MIT Lincoln Laboratory Journal* are free of charge, but provided only to qualified recipients (government employees and contractors, libraries, university faculty, and R&D laboratories).

## TABLE OF CONTENTS

Foreword.....	iii
Acknowledgments .....	vii
Lincoln Laboratory Journal .....	1
Quarterly Technical Reports .....	1
Miscellaneous Progress Reports .....	3
Technical Reports .....	5
Journal Articles .....	7
Meeting Speeches .....	17
Author Index .....	35
Subject Index .....	41

## **ACKNOWLEDGMENTS**

The Library and Information Services Group and the Publications Group made this publication possible. The contributions from others who worked on this publication are greatly appreciated.

## **LINCOLN LABORATORY JOURNAL**

Fall 1997

Vol. 10, No. 2

1998

Vol. 11, No. 1

## **QUARTERLY TECHNICAL REPORTS**

### **SOLID STATE RESEARCH**

	<b>DTIC No.</b>
1997:4	ADA342325
1998:1	ADA347651
1998:2	ADA355512
1998:3	ADA360556



## MISCELLANEOUS PROGRESS REPORTS

### UNCLASSIFIED PUBLICATIONS OF LINCOLN LABORATORY (Previous Volumes)

	DTIC No.
15 September 1966	AD803845
15 September 1969	AD863031
15 September 1971	AD734038
15 December 1973	AD778085
15 December 1975	ADA028523
15 December 1977	ADA062413
15 December 1979	ADA101092
15 December 1981	ADA129036
15 December 1983	ADA144354
31 December 1984	ADA161752
31 December 1985	ADA167987
31 December 1986	ADA187252
31 December 1987	ADA204729
31 December 1988	ADA212589
31 December 1989	ADA228219
31 December 1990	ADA236798
31 December 1991	ADA252852
31 December 1992	ADA265156
31 December 1993	ADA280530
31 December 1994	ADA306272
31 December 1995	ADA315140
31 December 1996	ADA326552
31 December 1997	ADA346370

## TECHNICAL REPORTS

TR No.				DTIC No.
1039	A Forward Error Control Scheme for GBS and BADD	Schein, B.E. Bernstein, S.L.	22 July 1997	ADA327920
1044	Use of the Auction Algorithm for Target Object Mapping	Rink, K.A O'Connor, D.A.	9 Feb. 1998	ADA338143
1045	A Case Study of Debris Characterization by Remote Sensing	Sridharan, R. Beavers, W.I. Gaposchkin, E.M. Lambour, R.L. Kansky, J.E.	18 Dec. 1998	ADA359035
1046	Passive Localization of Moving Emitters Using Out-of-Plane Multipath	Coutts, S.D.	30 Sep. 1998	ADA354324
1049	Radar Determination of Turbulence Exceedance Probability	Snow, J.W. Burke, H.K. Peduzzi, D.C. Upham, C.A. Jordan, M.P.	25 Sep. 1998	ADA354047

## JOURNAL ARTICLES

### JA No.

- |      |  |   |   |
|------|--|---|---|
| 7236 | All-Optical Network Consortium - Ultrafast TDM Networks  | Barry, R.A.<br>Chan, V.W.S.<br>Hall, K.L.<br>Kintzer, E.S.<br>Moores, J.D.<br>Rauschenbach, K.A.<br>Swanson, E.A.<br>Adams, L.E.<br>Doerr, C.R.<br>Finn, S.G.<br>Haus, H.A.<br>Ippen, E.P.<br>Wong, W.S.<br>Haner, M. | IEEE J. Sel. Areas Commun., Vol. 14, No. 5, June 1996, pp. 999-1013.  |
| 7360 | Diffraction-Limited 1.3- $\mu$ m-Wavelength Tapered-Gain-Region Lasers with >1-W CW Output Power | Walpole, J.N.<br>Donnelly, J.P.<br>Groves, S.H.<br>Missaggia, L.J.<br>Woodhouse, J.D.<br>Bailey, R.J.<br>Napoleone, A.  | IEEE Photonics Technol. Lett., Vol. 8, No. 11, November 1996, pp. 1429-1431.<br>ADA337671                           |
| 7418 | Enhanced Imagery Using Spectral-Estimation-Based Techniques                                      | Moore, T.G.<br>Zuerndorfer, B.W.<br>Burt, E.C. II   | Linc. Lab. J., Vol. 10, No. 2, 1997, pp. 171-186.   |
| 7425 | Microwave Photonic Links with Very Low ( $\approx 3$ dB) Amplifierless Noise Figure              | Cox, C.H. III<br>Ackerman, E.I.<br>Betts, G.E.  | Chapter in <i>Directions for the Next Generation of MMIC Devices and Systems</i> , Plenum Press, 1997, pp. 245-253. |
| 7426 | Diamond Grit-Based Field Emission Cathodes   | Geis, M.W.<br>Twichell, J.C.<br>Efremow, N.E., Jr.<br>Krohn, K.E.<br>Stern, M.B.<br>Lyszczarz, T.M.   | IEEE Electron Device Lett., Vol. 18, No. 12, December 1997, pp. 595-598.  |

## Journal Articles

### JA No.

- |      |  |   |   |
|------|--|---|---|
| 7427 | Binary Integration for<br>Swerling Target<br>Fluctuations  | Shnidman, D.A.  | IEEE Trans. Aerosp.<br>Electron. Syst.,<br>Vol. 34, No. 3, July 1998,<br>pp. 1043-1053.             |
| 7436 | High-Performance<br>Low-Complexity<br>Wordspotting Using Neural<br>Networks  | Chang, E.I.<br>Lippmann, R.P.   | IEEE Trans. Signal<br>Process., Vol. 45,<br>No. 11, November<br>1997, pp. 2864-2870.<br>ADA337674   |
| 7442 | Airborne Signal Intercept<br>for Wide-Area Battlefield<br>Surveillance   | Horowitz, L.L.  | Linc. Lab. J., Vol. 10,<br>No. 2, 1997,<br>pp. 87-98.   |
| 7443 | Utilizing Waveform<br>Features for Adaptive<br>Beamforming and Direction<br>Finding with Narrowband<br>Signals               | Forsythe, K.W.  | Linc. Lab. J., Vol. 10,<br>No. 2, 1997,<br>pp. 99-126.  |
| 7446 | Linear and Nonlinear<br>Microwave Dynamics of<br>Vortices in<br>YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-Δ</sub> Thin Films | Belk, N.<br>Oates, D.E.<br>Feld, D.A.<br>Dresselhaus, G.F.<br>Dresselhaus, M.S. | Phys. Rev. B,<br>Condens. Matter,<br>Vol. 56, No. 18,<br>1 November 1997,<br>pp. 11,966-11,978.     |
| 7452 | The Automatic<br>Target-Recognition System<br>in SAIP  | Novak, L.M.<br>Owirka, G.J.<br>Brower, W.S.<br>Weaver, A.L.                     | Linc. Lab. J., Vol. 10,<br>No. 2, 1997,<br>pp. 187-202.   |
| 7455 | Screening of Excitons in<br>GaN Crystals   | Reynolds, D.C.<br>Look, D.C.<br>Jogai, B.<br>Molnar, R.J.                       | J. Phys., Condens.<br>Matter., Vol. 10,<br>No. 25, 1998,<br>pp. 5577-5581.                          |
| 7460 | Measurements of L-Band<br>Inland-Water<br>Surface-Clutter Doppler<br>Spectra   | Billingsley, J.B.   | IEEE Trans. Aerosp.<br>Electron. Syst.,<br>Vol. 34, No. 2,<br>April 1998,<br>pp. 378-390. ADA351445 |

## JA No.

- |       |  |  |  |
|-------|--|--|--|
| 7461  | All-Optical Buffering of<br>40-Gb/s Data Packets   | Hall, K.L.<br>Rauschenbach, K.A.   | IEEE Photonics<br>Technol. Lett., Vol. 10,<br>No. 3, March 1998,<br>pp. 442-444. ADA340337 |
| 7463  | How Narrow is Narrowband?  | Zatman, M.A.   | IEE Proc. Radar<br>Sonar Navig., Vol. 145,<br>No. 2, April 1998,<br>pp. 85-91.             |
| 7465  | Laser-Fabricated Glass<br>Microlens Arrays   | Fritze, M.<br>Stern, M.B.<br>Wyatt, P.W.   | Opt. Lett., Vol. 23,<br>No. 2, 15 January 1998,<br>pp. 141-143.                            |
| 7468A | Improved Localization of<br>Energy Deposition in<br>Adaptive Phased-Array<br>Hyperthermia Treatment of<br>Cancer | Fenn, A.J.<br>Sathiaselan, V.<br>King, G.A.<br>Stauffer, P.R.  | J. Oncol. Manag.,<br>Vol. 9, No. 2,<br>March/April 1998,<br>pp. 22-29.                     |
| 7469  | A New Surface<br>Electron-Emission<br>Mechanism in Diamond<br>Cathodes   | Geis, M.W.<br>Efremow, N.E., Jr.<br>Krohn, K.E.<br>Twichell, J.C.<br>Lyszcza, T.M.<br>Kalish, R.<br>Greer, J.A.<br>Tabat, M.D. | Nature, Vol. 393,<br>No. 6684, 4 June<br>1998, pp. 431-435.<br>ADA351662                   |
| 7469A | Theory and Experimental<br>Results of a New Diamond<br>Surface-Emission Cathode                                  | Geis, M.W.<br>Efremow, N.E., Jr.<br>Krohn, K.E.<br>Twichell, J.C.<br>Lyszcza, T.M.<br>Kalish, R.<br>Greer, J.A.<br>Tabat, M.D. | Linc. Lab. J., Vol. 10,<br>No. 1, 1997, pp. 3-18.  |
| 7474  | Ultra-Wideband Coherent<br>Processing  | Cuomo, K.M.<br>Piou, J.E.<br>Mayhan, J.T.  | Linc. Lab. J., Vol. 10,<br>No. 2, 1997, pp. 203-222.                                       |

## Journal Articles

### JA No.

- |      |  |  |  |
|------|--|--|--|
| 7478 | Superresolution Source Location with Planar Arrays                           | Hatke, G.F.  | Linc. Lab. J., Vol. 10, No. 2, 1997, pp. 127-146.                                    |
| 7479 | Thin Silicide Development for Fully-Depleted SOI CMOS Technology             | Liu, H.I.<br>Burns, J.A.<br>Keast, C.L.<br>Wyatt, P.W.   | IEEE Trans. Electron Devices, Vol. 45, No. 5, May 1998, pp. 1099-1104.<br>ADA351825  |
| 7481 | Electrooptic Phased Array Transmitter  | Henion, S.R.<br>Schulz, P.A.   | IEEE Photonics Technol. Lett., Vol. 10, No. 3, March 1998, pp. 424-426.<br>ADA340342 |
| 7483 | Thermal Coefficients of the Optical Path Length and Refractive Index in YAG  | Fan, T.Y.<br>Daneu, J.L.   | Appl. Opt., Vol. 37, No. 9, 20 March 1998, pp. 1635-1637.<br>ADA351898               |
| 7485 | Phase Noise of a Resonant-Tunneling Relaxation Oscillator                    | Verghese, S.<br>Parker, C.D.<br>Brown, E.R.  | Appl. Phys. Lett., Vol. 72, No. 20, 18 May 1998, pp. 2550-2552.                      |
| 7486 | Zeeman Spectroscopy of Shallow Donors in GaN                                 | Moore, W.J.<br>Freitas, J.A., Jr.<br>Molnar, R.J.  | Phys. Rev. B, Condens. Matter, Vol. 56, No. 19, 15 November 1997, pp. 12,073-12,076. |
| 7495 | High-Performance GaInAsSb Thermophotovoltaic Devices with an AlGaAsSb Window | Choi, H-K.<br>Wang, C.A.<br>Turner, G.W.<br>Manfra, M.J.<br>Spears, D.L.<br>Charache, G.W.<br>Danielson, L.R.<br>Depoy, D.M. | Appl. Phys. Lett., Vol. 71, No. 26, 29 December 1997, pp. 3758-3760.                 |

## Journal Articles

### JA No.

- |      |  |  |   |
|------|--|--|---|
| 7496 | Photolithography at 193 nm   | Rothschild, M.<br>Horn, M.W.<br>Keast, C.L.<br>Kunz, R.R.<br>Lieberman, V.<br>Palmateer, S.C.<br>Doran, S.P.<br>Forte, A.R.<br>Goodman, R.B.<br>Sedlacek, J.H.C.<br>Uttaro, R.S.<br>Corliss, D.<br>Grenville, A. | Linc. Lab. J., Vol.<br>10, No. 1, 1997,<br>pp. 19-34. ADA351589   |
| 7498 | Lithography with 157 nm Lasers   | Bloomstein, T.M.<br>Horn, M.W.<br>Rothschild, M.<br>Kunz, R.R.<br>Palmacci, S.T.<br>Goodman, R.B.  | J. Vac. Sci.<br>Technol. B, Vol. 15,<br>No. 6,<br>November/December<br>1997, pp. 2112-2116<br>(41st Int. Conf. on<br>Electron, Ion, and<br>Photon Beam<br>Technology and<br>Nanofabrication,<br>27-30 May 1997).<br>ADA339489 |
| 7499 | High-Definition Vector Imaging   | Benitz, G.R.   | Linc. Lab. J., Vol. 10,<br>No. 2, 1997, pp. 147-170.  |
| 7500 | Asynchronous Phase-Modulated Optical Fiber-Ring Buffer                     | Jones, D.J.<br>Hall, K.L.<br>Haus, H.A.<br>Ippen, E.P.   | Opt. Lett., Vol. 23,<br>No. 3, 1 February<br>1998, pp. 177-179.   |
| 7501 | Automated English-Korean Translation for Enhanced Coalition Communications | Weinstein, C.J.<br>Lee, Y-S.<br>Seneff, S.<br>Tummala, D.R.<br>Carlson, B.A.<br>Lynch, J.T.<br>Hwang, J-T.<br>Kukolich, L.C.   | Linc. Lab. J., Vol.<br>10, No. 1, 1997,<br>pp. 35-60. ADA351873   |

## Journal Articles

### JA No.

- |      |   |  |   |
|------|---|--|---|
| 7504 | A 1.3-GHz SOI CMOS Test Chip for Low-Power High-Speed Pulse Processing  | Berger, R.<br>Lyons, G.W.<br>Soares, A.  | IEEE J. Solid-State Circuits, Vol. 33, No. 8, August 1998, pp. 1259-1261. |
| 7505 | Infrared Materials for Thermophotovoltaic Applications  | Charache, G.W.<br>Egley, J.L.<br>Depoy, D.M.<br>Danielson, L.R.<br>Freeman, M.J.<br>Dziendziel, R.J.<br>Moynihan, J.F.<br>Baldasaro, P.F.<br>Campbell, B.C.<br>Wang, C.A.<br>Choi, H-K.<br>Turner, G.W.<br>Wojtczuk, S.J.<br>Colter, P.<br>Sharps, P.<br>Timmons, M.<br>Fahey, R.E.<br>Zhang, K. | J. Electron. Mater., Vol. 27, No. 9, September 1998, pp. 1038-1042.       |
| 7512 | Comparison of a Rate-Equation Model with Experiment for the Resonant Tunneling Diode in the Scattering-Dominated Regime | Mattia, J.P.<br>McWhorter, A.L.<br>Aggarwal, R.J.<br>Rana, F.<br>Brown, E.R.<br>Maki, P.A.   | J. Appl. Phys., Vol. 84, No. 2, 15 July 1998, pp. 1140-1148.              |
| 7514 | Simplified Modeling of Transients in Gain-Clamped Erbium-Doped Fiber Amplifiers   | Chinn, S.R.  | J. Lightwave Technol., Vol. 16, No. 6, June 1998, pp. 1095-1100.          |
| 7515 | Pattern Transfer for Diffractive and Refractive Microoptics   | Stern, M.B.  | Microelectron. Eng., Vol. 34, No. 3-4, December 1997, pp. 299-319.        |



## JA No.

- |      |   |   |   |
|------|---|---|---|
| 7524 | Effects of Internal Loss on Power Efficiency of Mid-Infrared InAs-GaInSb-AlSb Quantum-Well Lasers and Comparison with InAsSb Lasers | Le, H.Q.<br>Lin, C.H.<br>Murray, S.J.<br>Yang, R.Q.<br>Pei, S.S.                                | IEEE J. Quantum Electron., Vol. 34, No. 6, June 1998, pp. 1016-1030.        |
| 7529 | OMVPE Growth of GaInAsSb in the 2-2.4 $\mu\text{m}$ Range   | Wang, C.A.  | J. Cryst. Growth, Vol. 191, No. 4, 1 August 1998, pp. 631-640.              |
| 7531 | Ultralow-Threshold (50A/cm <sup>2</sup> ) Strained Single-Quantum-Well GaInAsSb/AlGaAsSb Lasers Emitting at 2.05 $\mu\text{m}$      | Turner, G.W.<br>Choi, H-K.<br>Manfra, M.J.  | Appl. Phys. Lett., Vol. 72, No. 8, 23 February 1998, pp. 876-878. ADA351597 |
| 7533 | Bromine Ion-Beam-Assisted Etching of InP and GaAs   | Rossler, J.M.<br>Royter, Y.<br>Mull, D.E.<br>Goodhue, W.D.<br>Fonstad, C.G.                     | J. Vac. Sci. Technol. B, Vol. 16, No. 3, May/June 1998, pp. 1012-1017.      |
| 7536 | Exploiting Coherent Multipath for Mainbeam Jammer Suppression   | Kogon, S.M.<br>Williams, D.B.<br>Holder, E.J.   | IEE Proc. Radar Sonar Navig., Vol. 145, No. 5, October 1998, pp. 303-308.   |
| 7546 | GaInAsSb-AlGaAsSb Tapered Lasers Emitting at 2.05 $\mu\text{m}$ with 0.6-W Diffraction-Limited Power                                | Choi, H-K.<br>Walpole, J.N.<br>Turner, G.W.<br>Connors, M.K.<br>Missaggia, L.J.<br>Manfra, M.J. | IEEE Photonics Technol. Lett., Vol. 10, No. 7, July 1998, pp. 938-940.      |
| 7547 | Calculated and Measured Transmittance of Metallodielectric Photonic Crystals Incorporating Flat Metal Elements                      | Kao, A.<br>McIntosh, K.A.<br>McMahon, O.B.<br>Atkins, R.G.<br>Verghese, S.                      | Appl. Phys. Lett., Vol. 73, No. 2, 13 July 1998, pp. 145-147.               |

# Journal Articles

## JA No.

- |      |   |   |   |
|------|---|---|---|
| 7551 | Low-Loss High-Efficiency and High-Power Diode-Pumped Mid-Infrared GaInSb/InAs Quantum Well Lasers       | Le, H.Q.<br>Lin, C.H.<br>Pei, S.S.  | Appl. Phys. Lett.,<br>Vol. 72, No. 26,<br>29 June 1998,<br>pp. 3434-3436.       |
| 7555 | Toward Best-Effort Services over WDM Networks with Fair Access and Minimum Bandwidth Guarantee          | Kam, A.C.<br>Siu, K-Y.<br>Barry, R.A.<br>Swanson, E.A.  | IEEE J. Sel. Areas Commun., Vol. 16,<br>No. 7, September 1998, pp. 1024-1039.   |
| 7556 | High-Precision Film Thickness Determination Using a Laser-Based Ultrasonic Technique                    | Banet, M.J.<br>Fuchs, M.<br>Rogers, J.A.<br>Reinold, J.H., Jr.<br>Knecht, J.M.<br>Rothschild, M.<br>Logan, R.<br>Maznev, A.A.<br>Nelson, K.A. | Appl. Phys. Lett.,<br>Vol. 73, No. 2,<br>13 July 1998,<br>pp. 169-171.          |
| 7558 | 1.5- $\mu$ m Tapered-Gain-Region Lasers with High-CW Output Powers                                      | Donnelly, J.P.<br>Walpole, J.N.<br>Groves, S.H.<br>Bailey, R.J.<br>Missaggia, L.J.<br>Napoleone, A.<br>Reeder, R.E.<br>Cook, C.C.             | IEEE Photonics Technol. Lett., Vol. 10,<br>No. 10, October 1998, pp. 1377-1379. |
| 7561 | Planar Integration of a Resonant-Tunneling Diode with pHEMT Using a Novel Proton Implantation Technique | Chen, C-L.<br>Mahoney, L.J.<br>Calawa, S.D.<br>Mathews, R.H.<br>Molvar, K.M.<br>Sage, J.P.<br>Maki, P.A.<br>Sollner, T.C.L.G.                 | IEEE Electron Device Lett., Vol. 19, No. 12,<br>December 1998,<br>pp. 478-480.  |
| 7562 | 100-Gbit/s Bitwise Logic  | Hall, K.L.<br>Rauschenbach, K.A.  | Opt. Lett., Vol. 23,<br>No. 16, 15 August 1998,<br>pp. 1271-1273.               |

## JA No.

- |      |   |   |  |
|------|---|---|--|
| 7564 | Photoluminescence<br>Excitation Spectroscopy of<br>Free-to-Bound Transitions<br>in Undoped GaN Grown by<br>Hydride Vapor Phase<br>Epitaxy | Rhee, S.J.<br>Kim, S.<br>Reuter, E.E.<br>Bishop, S.G.<br>Molnar, R.J.   | Appl. Phys. Lett.,<br>Vol. 73, No. 18,<br>2 November 1998,<br>pp. 2636-2638.     |
| 7570 | Silicon-Rich-Methacrylate<br>Bilayer Resist for 193-nm<br>Lithography   | Blakeney, A.<br>Gabor, A.<br>White, D.<br>Steinhäusler, T.<br>Deady, W.R.<br>Jarmalowicz, J.J.<br>Kunz, R.R.<br>Dean, K.<br>Rich, G.<br>Stark, D. | Solid State<br>Technol., Vol. 41,<br>No. 6, June 1998,<br>pp. 69-79.             |
| 7571 | X-Ray Absorption Near Edge<br>Structure in the Quantum<br>Efficiency of X-Ray<br>Charge-Coupled Devices                                   | Prigozhin, G.Y.<br>Woo, J.<br>Gregory, J.A.<br>Loomis, A.H.<br>Bautz, M.W.<br>Ricker, G.R.<br>Kraft, S.   | Opt. Eng., Vol. 37,<br>No. 10, October<br>1998, pp. 2848-2854.                   |
| 7578 | The Development of<br>Superresolution at Lincoln<br>Laboratory  | Stiglitz, I.G.  | Linc. Lab. J., Vol. 10,<br>No. 2, 1997,<br>pp. 83-85.                            |
| 7579 | Comments on "A Mueller<br>Matrix Formalism for<br>Modeling Polarization<br>Effects in Erbium-Doped<br>Fiber"                              | Chinn, S.R.   | J. Lightwave<br>Technol., Vol. 16,<br>No. 10, October<br>1998, pp. 1942-1943.    |
| 7595 | Response of Sample<br>Covariance Based MVDR<br>Beamformer to Imperfect<br>Look and Inhomogeneities  | Richmond, C.D.  | IEEE Signal Process.<br>Lett., Vol. 5, No. 12,<br>December 1998,<br>pp. 325-327. |

## Journal Articles

### JA No.

7614    Microwave Power Handling  
         in Engineered  
          $\text{YBa}_2\text{Cu}_3\text{O}_{7-\Delta}$  Grain  
         Boundaries

Habib, Y.M.  
Oates, D.E.  
Dresselhaus, G.F.  
Dresselhaus, M.S.  
Vale, L.R.  
Ono, R.H.

Appl. Phys. Lett.,  
Vol. 73, No. 15,  
12 October 1998,  
pp. 2200-2202.

## MEETING SPEECHES

### MS No.

- |        |  |  |   |
|--------|--|--|---|
| 11633  | Hydride Vapor Phase<br>Epitaxy of Gallium Nitride<br>Films for Quasi-Bulk<br>Substrates              | Molnar, R.J.<br>Götz, W.<br>Romano, L.T.<br>Johnson, N.M.  | Proc. of the First<br>Symp. on III-V<br>Nitride Materials<br>and Processes, 1996,<br>pp. 212-226.   |
| 11748  | The Westford Water Vapor<br>Experiment: Use of GPS to<br>Determine Total<br>Precipitable Water Vapor | Coster, A.J.<br>Niell, A.E.<br>Solheim, F.S.<br>Mendes, V.B.<br>Toor, P.C.<br>Langley, R.B.<br>Ruggles, C.A.   | Proc. of the 52nd<br>Annual Mtg. of the<br>Institute of<br>Navigation,<br>Navigational<br>Technology for the<br>3rd Millennium,<br>19-21 June 1996,<br>pp. 529-538.   |
| 11835  | Antimonide-Based<br>Mid-Infrared Quantum-Well<br>Diode Lasers  | Turner, G.W.<br>Choi, H-K.   | Chapter 8 in<br><i>Optoelectronic<br/>Properties of<br/>Semiconductors and<br/>Superlattices</i> , Vol. 3,<br>Antimonide-Related<br>Strained Layer<br>Heterostructures,<br>Gordon & Breach,<br>1997, pp. 369-431. |
| 11842  | Large-Area<br>Back-Illuminated CCD<br>Imager Development   | Burke, B.E.<br>Gregory, J.A.<br>Mountain, R.W.<br>Kosicki, B.B.<br>Savoye, E.D.<br>Daniels, P.J.<br>Dolat, V.S.<br>Lind, T.L.<br>Loomis, A.H.<br>Young, D.J.<br>Luppino, G.A.<br>Tonry, J.L. | Exp. Astron., Vol. 8,<br>No. 1, 1998,<br>pp. 31-40.   |
| 11944A | Classifier Performance<br>Using Enhanced Resolution<br>SAR Data                                      | Novak, L.M.<br>Benitz, G.R.<br>Owirka, G.J.<br>Popielarz, J.D.   | IEEE Int. Radar Conf.<br>(Radar '97), 14-16<br>October 1997,<br>pp. 634-638.  |

## Meeting Speeches

### MS No.

- |        |  |   |  |
|--------|--|---|--|
| 11947A | InAsSb/InAlAsSb<br>Quantum-Well Diode Lasers<br>Emitting Between 3 and 4<br>$\mu\text{m}$                                      | Turner, G.W.<br>Choi, H-K.<br>Manfra, M.J.<br>Connors, M.K. | Materials Research<br>Society Symp. Proc.,<br>Vol. 450, 2-5<br>December 1996,<br>pp. 3-12.   |
| 11995  | III-V Quantum-Well<br>Structures for High-Speed<br>Electronics   | Brown, E.R.<br>McIntosh, K.A.                               | Advances in Research<br>and Development:<br>Heterojunctions for<br>High-Speed and<br>Infrared<br>Applications<br>(Series: Thin Films,<br>Vol. 23), January<br>1997, pp. 173-216. |
| 12111  | RCS Models and Analysis of<br>Metallic Mines   | Lee, C.F.<br>Ayasli, S.<br>Carlin, L.<br>Merchant, B.L.     | SPIE, Vol. 3079,<br>Detection and<br>Remediation<br>Technologies for<br>Mines and Minelike<br>Targets II, 21-24<br>April 1997,<br>pp. 581-597.                                   |
| 12159  | Some Limits on the<br>Performance of an Analog<br>Optical Link   | Cox, C.H. III<br>Ackerman, E.I.                             | SPIE, Vol. 3463,<br>Photonics and Radio<br>Frequency II, 21-22<br>July 1998, pp. 2-7.  |
| 12212  | Electromagnetic Pulse<br>Propagation and Scattering<br>from Terrain: Experimental<br>Observation and Comparison<br>with Theory | Zurk, L.M.<br>Coutts, S.D.                                  | IEEE Antennas and<br>Propagation Society<br>Int. Symp. 1997<br>Digest, Vol. 4,<br>13-18 July 1997,<br>pp. 2576-2579.   |

## Meeting Speeches

### MS No.

- |        |   |  |  |
|--------|---|--|--|
| 12234  | Photolithography at 0.10 and 0.13 $\mu\text{m}$ Using ArF Excimer Laser Lithography in Combination with Resolution Enhancement Techniques | Chan, M.<br>Kunz, R.R.<br>Doran, S.P.<br>Rothschild, M.  | J. Vac. Sci. Technol. B, Vol. 15, No. 6, November/December 1997, pp. 2404-2111 (41st Int. Conf. on Electron, Ion, and Photon Beam Technology and Nanofabrication, 27-30 May 1997). ADA351620 |
| 12251  | Correction of Near-Field Effects in Phased Array Element Pattern Measurements   | Aumann, H.M.   | IEEE Antennas and Propagation Society Int. Symp. 1997 Digest, Vol. 1, 13-18 July 1997, pp. 572-575.  |
| 12252A | Laser Micromachining of Silicon: A New Technique for Fabricating Terahertz Imaging Arrays   | Walker, C.K.<br>Hungerford, A.<br>Narayanan, G.<br>Groppi, C.<br>Bloomstein, T.M.<br>Palmacci, S.T.<br>Stern, M.B.<br>Curtin, J.E. | SPIE, Vol. 3357, Advanced Technology MMW, Radio, and Terahertz Telescopes, 26-28 March 1998, pp. 45-52.  |
| 12253  | Scheduling Algorithms for Message Transmission Over a Satellite Broadcast System  | Modiano, E.  | IEEE MILCOM '97, Vol. 2, 4 November 1997, pp. 628-634.   |
| 12290  | Time Delay Steering Architectures for Space-Time Adaptive Processing  | Zatman, M.A.<br>Baranoski, E.J.  | IEEE Antennas and Propagation Society Int. Symp. 1997 Digest, Vol. 4, 13-18 July 1997, pp. 2426-2429.  |

## Meeting Speeches

### MS No.

- |        |   |  |  |
|--------|---|--|--|
| 12336  | Demonstration of a Re-Configurable Wavelength-Routed Network at 1.14 Terabits-per-Second              | Hemenway, B.R., Jr.<br>Stevens, M.L.<br>Barry, R.A.<br>Koksal, E.<br>Swanson, E.A. | Conf. on Optical Fiber Communications, 1997 OSA Technical Digest Series, Vol. 6, 16-21 February 1997, pp. 471-474. |
| 12376A | Statistical Performance Analysis of the Adaptive Sidelobe Blanker Detection Algorithm                 | Richmond, C.D.   | Thirty-First Asilomar Conf. on Signals, Systems and Computers, Vol. 1, 2-5 November 1997, pp. 872-876.             |
| 12394  | Performance Characteristics of an Algorithm Used to Remove Anomalous Propagation from the NEXRAD Data | Isaminger, M.A.<br>Crowe, B.A.<br>Boorman, B.G.<br>Evans, J.E.<br>Boldi, R.A.      | 28th Conf. on Radar Meteorology, 7-12 September 1997, pp. 317-319.   |
| 12402A | Analyst Trainable Fusion Algorithms for Surveillance Applications                                     | Delanoy, R.L.<br>Lacoss, R.T.  | SPIE, Vol. 3370, Algorithms for Synthetic Aperture Radar Imagery V, 14-17 April 1998, pp. 143-154.                 |
| 12417A | Robust Speech Recognition with Time-Varying Filtering, Interruptions, and Noise                       | Lippmann, R.P.<br>Carlson, B.A.  | 1997 IEEE Workshop on Automatic Speech Recognition and Understanding Proc., September 1997, pp. 365-372.           |
| 12421  | Large-Area Micromechanical Flat-Panel Display   | Stern, E.  | 1997 Int. Display Research Conf., 15-19 September 1997, pp. 230-233.   |



## Meeting Speeches

### MS No.

- |        |   |   |  |
|--------|---|---|--|
| 12427  | Ultrafast Cryptography Using Optical Logic in Reconfigurable Feedback Shift Registers                 | Médard, M.<br>Chan, A.H.<br>Moore, J.D.<br>Hall, K.L.<br>Rauschenbach, K.A.<br>Parikh, S.A. | SPIE, Vol. 3228,<br>Multimedia Networks:<br>Security, Displays,<br>Terminals and<br>Gateways, 4-5<br>November 1997,<br>pp. 342-353.  |
| 12428  | Physical Security Considerations in All-Optical Networks  | Marquis, D.V.<br>Médard, M.<br>Barry, R.A.<br>Finn, S.G.                                    | SPIE, Vol. 3228,<br>Multimedia Networks:<br>Security, Displays,<br>Terminals, and<br>Gateways, 4-5<br>November 1997,<br>pp. 260-271.   |
| 12437  | Noise Reduction Based on Spectral Changes   | Quatieri, T.F.<br>Baxter, R.A.  | Proc. of the 1997<br>IEEE ASSP Workshop<br>on Applications of<br>Signal Processing to<br>Audio and Acoustics,<br>Session 8: Noise<br>Reduction, 19-22<br>October 1997,<br>4 pages. |
| 12449B | Experimental Observation and Modeling of Overland Height Finding                                      | Zurk, L.M.<br>Geddes, R.L.  | Proc. of the 1998<br>IEEE Radar Conf.,<br>RADARCON'98,<br>Challenges in Radar<br>Systems and<br>Solutions, 11-14 May<br>1998, pp. 411-416.   |
| 12466  | A Portable, Object-Based Parallel Library and Layered Framework for Real-Time Radar Signal Processing | DeLuca, C.A.<br>Heisey, C.W.<br>Bond, R.A.<br>Daly, J.M.                                    | First Int. Conf. on<br>Scientific Computing<br>in Object-Oriented<br>Parallel<br>Environments (ISCOPE<br>'97), No. 1343, 8-11<br>December 1997,<br>pp. 241-248.                    |

## Meeting Speeches

### MS No.

- |       |  |   |   |
|-------|--|---|---|
| 12488 | Substrate Misorientation<br>Effects on Epitaxial<br>GaInAsSb   | Wang, C.A.<br>Choi, H-K.<br>Oakley, D.C.<br>Charache, G.W.  | Materials Research<br>Society Symp. Proc.,<br>Vol. 484, 1998,<br>pp. 37-44. ADA351814   |
| 12495 | Marathon Damage Testing of<br>Pellicles for 193-nm<br>Lithography  | Grenville, A.<br>Liberman, V.<br>Kunz, R.R.<br>Rothschild, M.<br>Sedlacek, J.H.C.<br>Uttaro, R.S. | SPIE, Vol. 3236,<br>17th Annual Symp. on<br>Photomask Technology<br>and Management,<br>17-19 September<br>1997, pp. 456-463.  |
| 12520 | Mitigating Effects on STAP<br>Processing Caused by an<br>Inclined Array  | Borsari, G.K.   | Proc. of the 1998<br>IEEE Radar Conf.,<br>RADARCON'98,<br>Challenges in Radar<br>Systems and<br>Solutions, 11-14 May<br>1998, pp. 135-140.  |
| 12524 | Automatic Target<br>Recognition for LADAR<br>Imagery Using Functional<br>Templates Derived From 3D<br>CAD Models | Verly, J.G.<br>Lacoss, R.T.   | Chapter in<br><i>Reconnaissance,<br/>Surveillance, and<br/>Target Acquisition<br/>for the Unmanned<br/>Ground Vehicle:<br/>Providing<br/>Surveillance "Eyes"<br/>for an Autonomous<br/>Vehicle</i> , Morgan<br>Kaufmann Publishers,<br>1997, pp. 195-218. |
| 12528 | Bound on Mutual<br>Information for DS-CDMA<br>Spreading Over Independent<br>Fading Channels                      | Médard, M.  | Thirty-First<br>Asilomar Conf. on<br>Signals, Systems and<br>Computers, Vol. 1,<br>2-5 November 1997,<br>pp. 187-191.   |

## Meeting Speeches

### MS No.

- |        |   |   |  |
|--------|---|---|--|
| 12535  | A New 3-GSPS 65-GOPS UHF Digital Radar Receiver and Its Performance Characteristics | Song, W.S.  | Thirty-First Asilomar Conf. on Signals, Systems and Computers, Vol. 2, 2-5 November 1997, pp. 1542-1546.   |
| 12538  | Nanochannel Fabrication for Chemical Sensors  | Stern, M.B.<br>Geis, M.W.<br>Curtin, J.E.   | J. Vac. Sci. Technol. B, Vol. 15, No. 6, November/December 1997, pp. 2887-2891 (41st Int. Conf. on Electron, Ion, and Photon Beam Technology and Nanofabrication, 27-30 May 1997). ADA351859 |
| 12540  | Analysis and Results of the 1995 YUMA Ground Penetration SAR Measurements           | Jao, J.K.<br>Lee, C.F.<br>Ayasli, S.<br>Haywiser, E.J.  | Proc. of the 1998 IEEE Radar Conf., RADARCON'98, Challenges in Radar Systems and Solutions, 11-14 May 1998, pp. 251-256.   |
| 12560B | Performance of a 20-Target MSE Classifier   | Novak, L.M.<br>Owirka, G.J.<br>Brower, W.S.   | SPIE, Vol. 3395, Radar Sensor Technology III, 16 April 1998, pp. 138-151.  |
| 12562  | High-Power 1.5- $\mu$ m Tapered-Gain-Region Lasers                                  | Donnelly, J.P.<br>Walpole, J.N.<br>Groves, S.H.<br>Bailey, R.J.<br>Missaggia, L.J.<br>Napoleone, A.<br>Reeder, R.E.<br>Cook, C.C. | SPIE, Vol. 3284, In-Plane Semiconductor Lasers: From Ultraviolet to Mid-Infrared II, 26-28 January 1998, pp. 54-62. ADA351815  |

## Meeting Speeches

### MS No.

- |        |   |   |   |
|--------|---|---|---|
| 12564  | Modulation of Signals in Rapidly-Updated Adaptive Filters: Theory, Mitigation, and Applications                           | Rabideau, D.J.  | Thirty-First Asilomar Conf. on Signals, Systems and Computers, Vol. 2, 2-5 November 1997, pp. 1665-1669.  |
| 12577  | Characterization of p-Type PbEuTe/PbTe MQW Structures with High Thermoelectric Figures of Merit in the PbTe Quantum Wells | Harman, T.C.<br>Spears, D.L.<br>Calawa, D.R.<br>Groves, S.H.<br>Walsh, M.P.   | Sixteenth Int. Conf. on Thermoelectronics (ICT'97), 26-29 August 1997, pp. 416-423.   |
| 12594A | Unscheduled Multicasts in WDM Broadcast-and-Select Networks   | Modiano, E.   | IEEE INFOCOM'98, The Conf. on Computer Communications, Vol. 1, 29 March-2 April 1998, pp. 86-93.  |
| 12637  | The Depletion Depth of High Resistivity X-Ray CCDs  | Prigozhin, G.Y.<br>Gendreau, K.<br>Bautz, M.W.<br>Burke, B.E.<br>Ricker, G.R. | IEEE Trans. Nucl. Sci., Vol. 45, No. 3, June 1998, pp. 903-909 (1997 Nuclear Science Symp. and Medical Imaging Conf., NSS/MIC, 9-15 November 1997).   |
| 12640  | Magnitude-Only Estimation of Handset Nonlinearity with Application to Speaker Recognition                                 | Quatieri, T.F.<br>Reynolds, D.A.<br>O'Leary, G.C.                             | ICASSP'98, Proc. of the 1998 IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. II, Speech Processing II; Neural Networks for Signal Processing, 12-15 May 1998, pp. 745-748. |

## Meeting Speeches

### MS No.

- |       |   |  |   |
|-------|---|--|---|
| 12644 | A Novel Architecture and Medium Access Control (MAC) Protocol for WDM Networks        | Modiano, E.<br>Barry, R.A.<br>Swanson, E.A.  | Optical Fiber Communication Conf. and Exhibit, 1998<br>OSA Technical Digest Series, Vol. 2,<br>22-27 February 1998,<br>pp. 90-91.   |
| 12663 | High-Definition Vector Imaging for Synthetic Aperture Radar                           | Benitz, G.R.   | Thirty-First Asilomar Conf. on Signals, Systems and Computers, Vol. 2,<br>2-5 November 1997,<br>pp. 1204-1209.                      |
| 12664 | Line Edge Roughness in sub-0.18- $\mu$ m Resist Patterns                              | Palmateer, S.C.<br>Cann, S.G.<br>Curtin, J.E.<br>Doran, S.P.<br>Eriksen, L.M.<br>Forte, A.R.<br>Kunz, R.R.<br>Lyszczarz, T.M.<br>Stern, M.B.<br>Nelson, C.M. | SPIE, Vol. 3333,<br>Advances in Resist Technology and Processing XV, 23-25 February 1998,<br>pp. 634-642. ADA355081                 |
| 12665 | Attack Detection in All-Optical Networks  | Médard, M.<br>Chinn, S.R.<br>Saengudomlert, P.   | Optical Fiber Communication Conf. and Exhibit, 1998<br>OSA Technical Digest Series, Vol. 2,<br>22-27 February 1998,<br>pp. 272-273. |
| 12668 | A New Algorithm for Bi-Directional Link Self-Healing for Arbitrary Redundant Networks | Finn, S.G.<br>Médard, M.<br>Barry, R.A.  | Optical Fiber Communication Conf. and Exhibit, 1998<br>OSA Technical Digest Series, Vol. 2,<br>22-27 February 1998,<br>pp. 298-299. |

## Meeting Speeches

### MS No.

- |       |  |   |  |
|-------|--|---|--|
| 12671 | Subspace Domain<br>Forwards-Backwards<br>Averaging   | Zatman, M.A.                                  | ICASSP'98, Proc. of<br>the 1998 IEEE Int.<br>Conf. on Acoustics,<br>Speech and Signal<br>Processing, Vol. IV,<br>Statistical Signal<br>and Array<br>Processing;<br>Underwater Acoustics<br>Signal Processing,<br>12-15 May 1998,<br>pp. 1945-1948. |
| 12674 | Mainbeam Jammer<br>Suppression Using<br>Multipath Returns  | Kogon, S.M.<br>Holder, E.J.<br>Williams, D.B. | Thirty-First<br>Asilomar Conf. on<br>Signals, Systems and<br>Computers, Vol. 1,<br>2-5 November 1997,<br>pp. 279-283.  |
| 12677 | An Efficient Rooting<br>Algorithm for Simultaneous<br>Angle and Doppler<br>Estimation with Space-Time<br>Adaptive Processing Radar | Ward, J.<br>Hatke, G.F.                       | Thirty-First<br>Asilomar Conf. on<br>Signals, Systems and<br>Computers, Vol. 2,<br>2-5 November 1997,<br>pp. 1215-1218.  |
| 12687 | Multistage Cancellation of<br>Terrain Scattered Jamming<br>and Conventional Clutter  | Rabideau, D.J.                                | ICASSP'98, Proc. of<br>the 1998 IEEE Int.<br>Conf. on Acoustics,<br>Speech and Signal<br>Processing, Vol. IV,<br>Statistical Signal<br>and Array<br>Processing;<br>Underwater Acoustics<br>Signal Processing,<br>12-15 May 1998,<br>pp. 2001-2004. |

## Meeting Speeches

### MS No.

- |        |   |  |   |
|--------|---|--|---|
| 12692  | Delayed Differential RIN Reduction with Interferometric Noise Suppression   | Helkey, R.<br>Roussell, H.V.                       | Optical Fiber Communication Conf. and Exhibit, 1998<br>OSA Technical Digest Series, Vol. 2,<br>22-27 February 1998,<br>pp. 259-260.     |
| 12696  | Metrology Methods for the Quantification of Edge-Roughness  | Nelson, C.M.<br>Palmateer, S.C.<br>Lyszczarz, T.M. | SPIE, Vol. 3332,<br>Metrology,<br>Inspection, and<br>Process Control for<br>Microlithography<br>XII, 23-25 February<br>1998, pp. 19-29. |
| 12712A | New Millennium EO-1 Advanced Land Imager  | Digenis, C.J.<br>Lencioni, D.E.<br>Bicknell, W.E.  | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 49-55.   |
| 12723  | New Image Features for Discriminating Targets from Clutter  | Verbout, S.M.<br>Weaver, A.L.<br>Novak, L.M.       | SPIE, Vol. 3395,<br>Radar Sensor<br>Technology III, 16<br>April 1998,<br>pp. 120-137.   |
| 12724  | BER Analysis of Low-Rate Communications Through a Single Electro-Optic R2 Nonlinear Regenerator                       | Barry, R.A.<br>Médard, M.                          | CLEO'98, Conf. on<br>Lasers and<br>Electro-Optics, Vol.<br>6, 3-8 May 1998,<br>pp. 455-456.   |
| 12725  | Interferometric All-Optical Switching Using Nonlinearities in Semiconductor Optical Amplifiers Biased at Transparency | Robinson, B.S.<br>Hall, K.L.                       | CLEO'98, Conf. on<br>Lasers and<br>Electro-Optics, Vol.<br>6, 3-8 May 1998,<br>p. 2.  |

## Meeting Speeches

### MS No.

- |       |   |   |  |
|-------|---|---|--|
| 12726 | Error Analysis of Spectral Reflectance Derived from Imaging Spectrometer Data                     | Kerekes, J.P.   | IGARSS '98, Int. Geoscience and Remote Sensing Symp., Sensing and Managing the Environment, Vol. V, 6-10 July 1998, pp. 2697-2701. ADA354934   |
| 12735 | High-Power High-Efficiency Quasi-CW Sb-Based Mid-IR Lasers Using 1.9- $\mu$ m Laser Diode Pumping | Le, H.Q.<br>Turner, G.W.<br>Ochoa, J.R.                         | IEEE Photonics Technol. Lett., Vol. 10, No. 5, May 1998, pp. 663-665.  |
| 12781 | Radiometric Error in GOES 8 Imager Data Due to Sensor MTF   | Wack, E.C.<br>Baum, J.E.  | SPIE, Vol. 3439, Earth Observing Systems III, 19-21 July 1998, pp. 155-164.  |
| 12791 | A Multilayered Packaging Architecture for Spatial Power Combined Arrays                           | Duffy, S.M.   | IEEE Antennas and Propagation Society Int. Symp. 1998 Digest, Vol. 1, 21-26 June 1998, pp. 494-497.  |
| 12792 | The Optimal BPSK Demodulator with a 1-bit A/D Front-end   | Wu, P.H.  | IEEE MILCOM '98, Vol. 3, 21 October 1998, pp. 730-735.   |
| 12793 | A Microwave Instrument for Temperature and Humidity Sounding from Geosynchronous Orbit            | Solman, F.J.<br>Staelin, D.H.<br>Kerekes, J.P.<br>Shields, M.W. | IGARSS '98, Int. Geoscience and Remote Sensing Symp., Sensing and Managing the Environment, Vol. III, 6-10 July 1998, pp. 1704-1707. ADA354799 |



## Meeting Speeches

### MS No.

- |       |   |   |   |
|-------|---|---|---|
| 12794 | The Emergency GOES Imager (EGI)   | Coakley, M.M.<br>Candell, L.M.<br>MacDonald, M.E.<br>Ryan-Howard, D.P.<br>Weitz, D.M.<br>Berthiaume, G.D.<br>Carlisle, G.W.<br>Wack, E.C.<br>Wilson, C.F.<br>Hawkins, J.<br>Heymann, R. | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 202-214.   |
| 12795 | Brassboard Tests of a High-Resolution Interferometer (GHIS) Installed in a GOES Sounder | Bicknell, W.E.<br>Candell, L.M.<br>Kocher, D.G.<br>Ryan-Howard, D.P.<br>Weitz, D.M.   | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 187-201.   |
| 12799 | Low Sidelobe Taper Choice for Wideband Adaptive Arrays                                  | Zatman, M.A.  | IEEE Antennas and<br>Propagation Society<br>Int. Symp. 1998<br>Digest, Vol. 1,<br>21-26 June 1998,<br>pp. 192-194.                              |
| 12804 | 3-D Jammer Localization Using Out-of-Plane Multipath                                    | Coutts, S.D.  | Proc. of the 1998<br>IEEE Radar Conf.,<br>RADARCON'98,<br>Challenges in Radar<br>Systems and<br>Solutions, 11-14 May<br>1998, pp. 219-224.      |
| 12813 | Photolithography at Wavelengths Below 200 nm  | Rothschild, M.  | SPIE, Vol. 3274,<br>Laser Applications<br>in Microelectronic<br>and Optoelectronic<br>Manufacturing III,<br>26-28 January 1998,<br>pp. 222-228. |

## Meeting Speeches

### MS No.

- |       |   |   |  |
|-------|---|---|--|
| 12817 | NPOESS Airborne Sounder<br>Testbed Interferometer<br>(NAST-I) Signal Processing<br>and Initial Flight Test<br>Results | Gazarik, M.J.<br>Candell, L.M.<br>Leonard, E.T.<br>Prutzer, S.                                | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 503-514.  |
| 12832 | EO-1 Advanced Land Imager<br>Pre-Flight Calibration   | Mendenhall, J.A.<br>Lencioni, D.E.<br>Hearn, D.R.<br>Parker, A.C.                             | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 390-399.  |
| 12834 | Characterization of<br>Instrument Spectral<br>Resolution by the Spectral<br>Modulation Transfer<br>Function           | Hearn, D.R.   | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 400-407.  |
| 12835 | EO-1 Advanced Land Imager<br>In-Flight Calibration  | Mendenhall, J.A.<br>Lencioni, D.E.<br>Hearn, D.R.<br>Parker, A.C.                             | SPIE, Vol. 3439,<br>Earth Observing<br>Systems III, 19-21<br>July 1998,<br>pp. 416-422.  |
| 12846 | Efficiency and Power<br>Issues in Sb-Based<br>Mid-Infrared Lasers   | Le, H.Q.<br>Turner, G.W.<br>Ochoa, J.R.<br>Choi, H-K.<br>Lin, C.H.<br>Yang, R.Q.<br>Pei, S.S. | SPIE, Vol. 3284,<br>In-Plane<br>Semiconductor<br>Lasers: From<br>Ultraviolet to<br>Mid-Infrared II,<br>26-28 January 1998,<br>pp. 276-284. |
| 12847 | Adaptive-Optics<br>Compensation Using Active<br>Illumination  | Higgs, C.<br>Barclay, H.T.<br>Kansky, J.E.<br>Murphy, D.V.<br>Primmerman, C.A.                | SPIE, Vol. 3381,<br>Airborne Laser<br>Advanced Technology,<br>13-14 April 1998,<br>pp. 47-56.  |

MS No.

- |       |   |  |  |
|-------|---|--|--|
| 12848 | Overview of the<br>ABL-Firepond<br>Active-Tracking and<br>Compensation Facility | Higgs, C.  | SPIE, Vol. 3381,<br>Airborne Laser<br>Advanced Technology,<br>13-14 April 1998,<br>pp. 14-22.  |
| 12849 | Active Tracking Using<br>Multibeam Illumination                                 | Higgs, C.<br>Barclay, H.T.<br>Cusumano, S.<br>Billman, K.  | SPIE, Vol. 3381,<br>Airborne Laser<br>Advanced Technology,<br>13-14 April 1998,<br>pp. 160-167.  |
| 12877 | Properties and<br>Applications of Wideband<br>Cramer-Rao Bounds                 | Zatman, M.A.   | Ninth IEEE Signal<br>Processing Workshop<br>on Statistical<br>Signal and Array<br>Processing, 14-16<br>September 1998,<br>pp. 41-44.       |
| 12889 | A Multistage STAP CFAR<br>Detection Technique                                   | Goldstein, J.S.<br>Reed, I.S.<br>Zulch, P.A.<br>Melvin, W.L.   | Proc. of the 1998<br>IEEE Radar Conf.,<br>RADARCON'98,<br>Challenges in Radar<br>Systems and<br>Solutions, 11-14 May<br>1998, pp. 111-116. |
| 12895 | Crossbar Tree Networks for<br>Embedded Signal Processing<br>Applications        | Teitelbaum, K.   | Fifth Int. Conf. on<br>Massively Parallel<br>Processing, 15-17<br>June 1998,<br>pp. 200-207.   |
| 12898 | Damage Testing of<br>Pellicles for 193-nm<br>Lithography                        | Lieberman, V.<br>Kunz, R.R.<br>Rothschild, M.<br>Sedlacek, J.H.C.<br>Uttaro, R.S.<br>Grenville, A.<br>Bates, A.K.<br>Van Peski, C. | SPIE, Vol. 3334,<br>Optical<br>Microlithography XI,<br>25-27 February 1998,<br>pp. 480-495.  |

## Meeting Speeches

### MS No.

- |       |  |  |  |
|-------|--|--|--|
| 12926 | Space-Time Adaptive Processing for Airborne Radar  | Ward, J.   | IEE Coll. on Space-Time Adaptive Processing, 6 April 1998, pp. 2/1-2/6.  |
| 12931 | Algorithms for Mitigating Terrain-Scattered Interference   | Gabel, R.A.  | IEE Coll. on Space-Time Adaptive Processing, 6 April 1998, pp. 7/1-7/8.  |
| 12943 | Vulnerabilities of Reliable Multicast Protocols  | Parks, T.M.<br>Kassay, D.A.<br>Weinstein, C.J.   | IEEE MILCOM '98, Vol. 3, 21 October 1998, pp. 934-938.   |
| 12975 | Real-Time Fusion of Low-Light CCD and Uncooled IR Imagery for Color Night Vision                         | Aguilar, J.M.<br>Fay, D.A.<br>Ross, W.D.<br>Waxman, A.M.<br>Ireland, D.B.<br>Racamato, J.P., Jr. | SPIE, Vol. 3364, Enhanced and Synthetic Vision 1998, 13-14 April 1998, pp. 124-135.  |
| 12979 | AM-FM Separation Using Shunting Neural Networks  | Baxter, R.A.<br>Quatieri, T.F.   | Proc. of the IEEE-SP Int. Symp. on Time-Frequency and Time-Scale Analysis, 6-9 October 1998, pp. 553-556.  |
| 13011 | U.S. Space Surveillance Network Capabilities   | Sridharan, R.<br>Pensa, A.F.   | SPIE, Vol. 3434, Image Intensifiers and Applications; and Characteristics and Consequences of Space Debris and Near-Earth Objects, 23 July 1998, pp. 88-100. |
| 13056 | Investigation of Three-Dimensional Metallodielectric Photonic Crystals Incorporating Flat Metal Elements | McIntosh, K.A.<br>McMahon, O.B.<br>Kao, A.<br>Atkins, R.G.<br>Verghese, S.                       | SPIE, Vol. 3464, Optical Devices and Methods for Microwave/Millimeter-Wave and Frontier Applications, 22-23 July 1998, pp. 164-173.                          |

MS No.

- |       |  |   |  |
|-------|--|---|--|
| 13075 | Generation and Detection of Coherent Terahertz Waves Using Two Photomixers         | Verghese, S.<br>McIntosh, K.A.<br>Calawa, S.D.<br>Dinatale, W.F.<br>Duerr, E.K.<br>Molvar, K.M. | Appl. Phys. Lett.,<br>Vol. 73, No. 26,<br>28 December 1998,<br>pp. 3824-3826.  |
| 13129 | Statistics of Adaptive Nulling and Modeling Inhomogeneities in Adaptive Processing | Richmond, C.D.  | Ninth IEEE Signal Processing Workshop on Statistical Signal and Array Processing, 14-16 September 1998, pp. 65-68.   |
| 13130 | Pulse Driven Gaussian Minimum Shift Keying   | Rhodes, R.R.<br>Hetling, K.J.   | IEEE MILCOM '98, Vol. 2, 20 October 1998, pp. 509-514.   |
| 13150 | Real-Time Embedded Signal Processing   | Martinez, D.R.  | IEEE Signal Process. Mag., Vol. 15, No. 5, September 1998, pp. 65-66.  |
| 13218 | Architectural Considerations in the Design of WDM-Based Optical Access Networks    | Modiano, E.   | SPIE, Vol. 3531, All-Optical Networking: Architecture, Control, and Management Issues, 3-5 November 1998, pp. 88-98. |

## AUTHOR INDEX

- Ackerman, E.I., JA-7425, MS-12159  
 Adams, L.E., JA-7236  
 Aggarwal, R.J., JA-7512  
 Aguilar, J.M., MS-12975  
 Atkins, R.G., JA-7547, MS-13056  
 Aumann, H.M., MS-12251  
 Ayasli, S., MS-12111, MS-12540  
 Bailey, R.J., JA-7360, JA-7558, MS-12562  
 Baldasaro, P.F., JA-7505  
 Banet, M.J., JA-7556  
 Baranoski, E.J., MS-12290  
 Barclay, H.T., MS-12847, MS-12849  
 Barry, R.A., JA-7236, JA-7555, MS-12336,  
 MS-12428, MS-12644, MS-12668, MS-12724  
 Bates, A.K., MS-12898  
 Baum, J.E., MS-12781  
 Bautz, M.W., JA-7571, MS-12637  
 Baxter, R.A., MS-12437, MS-12979  
 Beavers, W.I., TR-1045  
 Belk, N., JA-7446  
 Benitz, G.R., JA-7499, MS-11944A, MS-12663  
 Berger, R., JA-7504  
 Bernstein, S.L., TR-1039  
 Berthiaume, G.D., MS-12794  
 Betts, G.E., JA-7425  
 Bicknell, W.E., MS-12712A, MS-12795  
 Billingsley, J.B., JA-7460  
 Billman, K., MS-12849  
 Bishop, S.G., JA-7564  
 Blakeney, A., JA-7570  
 Bloomstein, T.M., JA-7498, MS-12252A  
 Boldi, R.A., MS-12394  
 Bond, R.A., MS-12466  
 Boorman, B.G., MS-12394  
 Borsari, G.K., MS-12520  
 Brower, W.S., JA-7452, MS-12560B  
 Brown, E.R., JA-7485, JA-7512, MS-11995  
 Burke, B.E., MS-11842, MS-12637  
 Burke, H.K., TR-1049  
 Burns, J.A., JA-7479  
 Burt, E.C. II, JA-7418  
 Calawa, D.R., MS-12577  
 Calawa, S.D., JA-7561, MS-13075  
 Campbell, B.C., JA-7505  
 Candell, L.M., MS-12794, MS-12795,  
 MS-12817  
 Cann, S.G., MS-12664  
 Carlin, L., MS-12111  
 Carlisle, G.W., MS-12794  
 Carlson, B.A., JA-7501, MS-12417A  
 Chan, A.H., MS-12427  
 Chan, M., MS-12234  
 Chan, V.W.S., JA-7236  
 Chang, E.I., JA-7436  
 Charache, G.W., JA-7495, JA-7505,  
 MS-12488  
 Chen, C-L., JA-7561  
 Chinn, S.R., JA-7514, JA-7579, MS-12665  
 Choi, H-K., JA-7495, JA-7505, JA-7531,  
 JA-7546, MS-11835, MS-11947A, MS-12488,  
 MS-12846  
 Coakley, M.M., MS-12794  
 Colter, P., JA-7505  
 Connors, M.K., JA-7546, MS-11947A  
 Cook, C.C., JA-7558, MS-12562  
 Corliss, D., JA-7496  
 Coster, A.J., MS-11748  
 Coutts, S.D., TR-1046, MS-12212,  
 MS-12804  
 Cox, C.H. III, JA-7425, MS-12159  
 Crowe, B.A., MS-12394  
 Cuomo, K.M., JA-7474  
 Curtin, J.E., MS-12252A, MS-12538,  
 MS-12664  
 Cusumano, S., MS-12849  
 Daly, J.M., MS-12466  
 Daneu, J.L., JA-7483  
 Daniels, P.J., MS-11842  
 Danielson, L.R., JA-7495, JA-7505  
 Deady, W.R., JA-7570  
 Dean, K., JA-7570  
 Delanoy, R.L., MS-12402A  
 DeLuca, C.A., MS-12466  
 Depoy, D.M., JA-7495, JA-7505  
 Digenis, C.J., MS-12712A  
 Dinatale, W.F., MS-13075

## Author Index

- Doerr, C.R., JA-7236  
Dolat, V.S., MS-11842  
Donnelly, J.P., JA-7360, JA-7558, MS-12562  
Doran, S.P., JA-7496, MS-12234, MS-12664  
Dresselhaus, G.F., JA-7446, JA-7614  
Dresselhaus, M.S., JA-7446, JA-7614  
Duerr, E.K., MS-13075  
Duffy, S.M., MS-12791  
Dziendziel, R.J., JA-7505  
Efremow, N.E., Jr., JA-7426, JA-7469,  
JA-7469A  
Egley, J.L., JA-7505  
Eriksen, L.M., MS-12664  
Evans, J.E., MS-12394  
Fahey, R.E., JA-7505  
Fan, T.Y., JA-7483  
Fay, D.A., MS-12975  
Feld, D.A., JA-7446  
Fenn, A.J., JA-7468A  
Finn, S.G., JA-7236, MS-12428, MS-12668  
Fonstad, C.G., JA-7533  
Forsythe, K.W., JA-7443  
Forte, A.R., JA-7496, MS-12664  
Freeman, M.J., JA-7505  
Freitas, J.A., Jr., JA-7486  
Fritze, M., JA-7465  
Fuchs, M., JA-7556  
Gabel, R.A., MS-12931  
Gabor, A., JA-7570  
Gaposchkin, E.M., TR-1045  
Gazarik, M.J., MS-12817  
Geddes, R.L., MS-12449B  
Geis, M.W., JA-7426, JA-7469,  
JA-7469A, MS-12538  
Gendreau, K., MS-12637  
Goldstein, J.S., MS-12889  
Goodhue, W.D., JA-7533  
Goodman, R.B., JA-7496, JA-7498  
Götz, W., MS-11633  
Greer, J.A., JA-7469, JA-7469A  
Gregory, J.A., JA-7571, MS-11842  
Grenville, A., JA-7496, MS-12495,  
MS-12898  
Groppi, C., MS-12252A  
Groves, S.H., JA-7360, JA-7558, MS-12562,  
MS-12577  
Habib, Y.M., JA-7614  
Hall, K.L., JA-7236, JA-7461, JA-7500,  
JA-7562, MS-12427, MS-12725  
Haner, M., JA-7236  
Harman, T.C., MS-12577  
Hatke, G.F., JA-7478, MS-12677  
Haus, H.A., JA-7236, JA-7500  
Hawkins, J., MS-12794  
Haywiser, E.J., MS-12540  
Hearn, D.R., MS-12832, MS-12834,  
MS-12835  
Heisey, C.W., MS-12466  
Helkey, R., MS-12692  
Hemenway, B.R., Jr., MS-12336  
Henion, S.R., JA-7481  
Hetling, K.J., MS-13130  
Heymann, R., MS-12794  
Higgs, C., MS-12847, MS-12848, MS-12849  
Holder, E.J., JA-7536, MS-12674  
Horn, M.W., JA-7496, JA-7498  
Horowitz, L.L., JA-7442  
Hungerford, A., MS-12252A  
Hwang, J-T., JA-7501  
Ippen, E.P., JA-7236, JA-7500  
Ireland, D.B., MS-12975  
Isaminger, M.A., MS-12394  
Jao, J.K., MS-12540  
Jarmalowicz, J.J., JA-7570  
Jogai, B., JA-7455  
Johnson, N.M., MS-11633  
Jones, D.J., JA-7500  
Jordan, M.P., TR-1049  
Kalish, R., JA-7469, JA-7469A  
Kam, A.C., JA-7555  
Kansky, J.E., TR-1045, MS-12847  
Kao, A., JA-7547, MS-13056  
Kassay, D.A., MS-12943  
Keast, C.L., JA-7479, JA-7496  
Kerekes, J.P., MS-12726, MS-12793  
Kim, S., JA-7564  
King, G.A., JA-7468A  
Kintzer, E.S., JA-7236

- Knecht, J.M., JA-7556  
 Kocher, D.G., MS-12795  
 Kogon, S.M., JA-7536, MS-12674  
 Koksai, E., MS-12336  
 Kosicki, B.B., MS-11842  
 Kraft, S., JA-7571  
 Krohn, K.E., JA-7426, JA-7469, JA-7469A  
 Kukolich, L.C., JA-7501  
 Kunz, R.R., JA-7496, JA-7498, JA-7570,  
 MS-12234, MS-12495, MS-12664,  
 MS-12898  
 Lacoss, R.T., MS-12402A, MS-12524  
 Lambour, R.L., TR-1045  
 Langley, R.B., MS-11748  
 Le, H.Q., MS-12735, JA-7524, JA-7551,  
 MS-12846  
 Lee, C.F., MS-12111, MS-12540  
 Lee, Y-S., JA-7501  
 Lencioni, D.E., MS-12712A, MS-12832,  
 MS-12835  
 Leonard, E.T., MS-12817  
 Liberman, V., JA-7496, MS-12495,  
 MS-12898  
 Lin, C.H., JA-7524, JA-7551, MS-12846  
 Lind, T.L., MS-11842  
 Lippmann, R.P., JA-7436, MS-12417A  
 Liu, H.I., JA-7479  
 Logan, R., JA-7556  
 Look, D.C., JA-7455  
 Loomis, A.H., JA-7571, MS-11842  
 Luppino, G.A., MS-11842  
 Lynch, J.T., JA-7501  
 Lyons, G.W., JA-7504  
 Lyszczaarz, T.M., JA-7426, JA-7469,  
 JA-7469A, MS-12664, MS-12696  
 MacDonald, M.E., MS-12794  
 Mahoney, L.J., JA-7561  
 Maki, P.A., JA-7512, JA-7561  
 Manfra, M.J., JA-7495, JA-7531, JA-7546,  
 MS-11947A  
 Marquis, D.V., MS-12428  
 Martinez, D.R., MS-13150  
 Mathews, R.H., JA-7561  
 Mattia, J.P., JA-7512  
 Mayhan, J.T., JA-7474  
 Maznev, A.A., JA-7556  
 McIntosh, K.A., JA-7547, MS-11995,  
 MS-13056, MS-13075  
 McMahon, O.B., JA-7547, MS-13056  
 McWhorter, A.L., JA-7512  
 Médard, M., MS-12427, MS-12428,  
 MS-12528, MS-12665, MS-12668,  
 MS-12724  
 Melvin, W.L., MS-12889  
 Mendenhall, J.A., MS-12832, MS-12835  
 Mendes, V.B., MS-11748  
 Merchant, B.L., MS-12111  
 Missaggia, L.J., JA-7360, JA-7546,  
 JA-7558, MS-12562  
 Modiano, E., MS-12253, MS-12594A,  
 MS-12644, MS-13218  
 Molnar, R.J., JA-7455, JA-7486, JA-7564,  
 MS-11633  
 Molvar, K.M., JA-7561, MS-13075  
 Moore, T.G., JA-7418  
 Moore, W.J., JA-7486  
 Moores, J.D., JA-7236, MS-12427  
 Mountain, R.W., MS-11842  
 Moynihan, J.F., JA-7505  
 Mull, D.E., JA-7533  
 Murphy, D.V., MS-12847  
 Murray, S.J., JA-7524  
 Napoleone, A., JA-7360, JA-7558,  
 MS-12562  
 Narayanan, G., MS-12252A  
 Nelson, C.M., MS-12664, MS-12696  
 Nelson, K.A., JA-7556  
 Niell, A.E., MS-11748  
 Novak, L.M., JA-7452, MS-11944A,  
 MS-12560B, MS-12723  
 O'Connor, D.A., TR-1044  
 O'Leary, G.C., MS-12640  
 Oakley, D.C., MS-12488  
 Oates, D.E., JA-7446, JA-7614  
 Ochoa, J.R., MS-12735, MS-12846  
 Ono, R.H., JA-7614  
 Owirka, G.J., JA-7452, MS-11944A,  
 MS-12560B



## Author Index

- Palmacci, S.T., JA-7498, MS-12252A  
 Palmateer, S.C., JA-7496, MS-12664,  
 MS-12696  
 Parikh, S.A., MS-12427  
 Parker, A.C., MS-12832, MS-12835  
 Parker, C.D., JA-7485  
 Parks, T.M., MS-12943  
 Peduzzi, D.C., TR-1049  
 Pei, S.S., JA-7524, JA-7551, MS-12846  
 Pensa, A.F., MS-13011  
 Piou, J.E., JA-7474  
 Popielarz, J.D., MS-11944A  
 Prigozhin, G.Y., JA-7571, MS-12637  
 Primmerman, C.A., MS-12847  
 Prutzer, S., MS-12817  
 Quatieri, T.F., MS-12437, MS-12640,  
 MS-12979  
 Rabideau, D.J., MS-12564, MS-12687  
 Racamato, J.P., Jr., MS-12975  
 Rana, F., JA-7512  
 Rauschenbach, K.A., JA-7236, JA-7461,  
 JA-7562, MS-12427  
 Reed, I.S., MS-12889  
 Reeder, R.E., JA-7558, MS-12562  
 Reinold, J.H., Jr., JA-7556  
 Reuter, E.E., JA-7564  
 Reynolds, D.A., MS-12640  
 Reynolds, D.C., JA-7455  
 Rhee, S.J., JA-7564  
 Rhodes, R.R., MS-13130  
 Rich, G., JA-7570  
 Richmond, C.D., JA-7595, MS-12376A,  
 MS-13129  
 Ricker, G.R., JA-7571, MS-12637  
 Rink, K.A., TR-1044  
 Robinson, B.S., MS-12725  
 Rogers, J.A., JA-7556  
 Romano, L.T., MS-11633  
 Ross, W.D., MS-12975  
 Rossler, J.M., JA-7533  
 Rothschild, M., JA-7496, JA-7498,  
 JA-7556, MS-12234, MS-12495,  
 MS-12813, MS-12898  
 Roussell, H.V., MS-12692  
 Royter, Y., JA-7533  
 Ruggles, C.A., MS-11748  
 Ryan-Howard, D.P., MS-12794, MS-12795  
 Saengudomlert, P., MS-12665  
 Sage, J.P., JA-7561  
 Sathiaseelan, V., JA-7468A  
 Savoye, E.D., MS-11842  
 Schein, B.E., TR-1039  
 Schulz, P.A., JA-7481  
 Sedlacek, J.H.C., JA-7496, MS-12495,  
 MS-12898  
 Seneff, S., JA-7501  
 Sharps, P., JA-7505  
 Shields, M.W., MS-12793  
 Shnidman, D.A., JA-7427  
 Siu, K-Y., JA-7555  
 Snow, J.W., TR-1049  
 Soares, A., JA-7504  
 Solheim, F.S., MS-11748  
 Sollner, T.C.L.G., JA-7561  
 Solman, F.J., MS-12793  
 Song, W.S., MS-12535  
 Spears, D.L., JA-7495, MS-12577  
 Sridharan, R., TR-1045, MS-13011  
 Staelin, D.H., MS-12793  
 Stark, D., JA-7570  
 Stauffer, P.R., JA-7468A  
 Steinhäusler, T., JA-7570  
 Stern, E., MS-12421  
 Stern, M.B., JA-7426, JA-7465, JA-7515,  
 MS-12252A, MS-12538, MS-12664  
 Stevens, M.L., MS-12336  
 Stiglitz, I.G., JA-7578  
 Swanson, E.A., JA-7236, JA-7555,  
 MS-12336, MS-12644  
 Tabat, M.D., JA-7469, JA-7469A  
 Teitelbaum, K., MS-12895  
 Timmons, M., JA-7505  
 Tonry, J.L., MS-11842  
 Toor, P.C., MS-11748  
 Tummala, D.R., JA-7501

Turner, G.W., JA-7495, JA-7505, JA-7531,  
JA-7546, MS-11835, MS-11947A,  
MS-12735, MS-12846  
Twichell, J.C., JA-7426, JA-7469, JA-7469A  
Upham, C.A., TR-1049  
Uttaro, R.S., JA-7496, MS-12495,  
MS-12898  
Vale, L.R., JA-7614  
Van Peski, C., MS-12898  
Verbout, S.M., MS-12723  
Verghese, S., JA-7485, JA-7547, MS-13056,  
MS-13075  
Verly, J.G., MS-12524  
Wack, E.C., MS-12781, MS-12794  
Walker, C.K., MS-12252A  
Walpole, J.N., JA-7360, JA-7546, JA-7558,  
MS-12562  
Walsh, M.P., MS-12577  
Wang, C.A., JA-7495, JA-7505, JA-7529,  
MS-12488  
Ward, J., MS-12677, MS-12926

Waxman, A.M., MS-12975  
Weaver, A.L., JA-7452, MS-12723  
Weinstein, C.J., JA-7501, MS-12943  
Weitz, D.M., MS-12794, MS-12795  
White, D., JA-7570  
Williams, D.B., JA-7536, MS-12674  
Wilson, C.F., MS-12794  
Wojtczuk, S.J., JA-7505  
Wong, W.S., JA-7236  
Woo, J., JA-7571  
Woodhouse, J.D., JA-7360  
Wu, P.H., MS-12792  
Wyatt, P.W., JA-7465, JA-7479  
Yang, R.Q., JA-7524, MS-12846  
Young, D.J., MS-11842  
Zatman, M.A., JA-7463, MS-12290,  
MS-12671, MS-12799, MS-12877  
Zhang, K., JA-7505  
Zuerndorfer, B.W., JA-7418  
Zulch, P.A., MS-12889  
Zurk, L.M., MS-12212, MS-12449B

## SUBJECT INDEX

### ABSORPTION

JA-7571

### ACCESS NETWORKS

MS-13218

### ADAPTIVE ARRAYS

JA-7578, MS-12799, MS-13150

### ADAPTIVE BEAMFORMING

JA-7443

### ADAPTIVE ESTIMATION

MS-12376A

### ADAPTIVE FILTERS

MS-12376A, MS-12564

### ADAPTIVE NULLING

MS-13129

### ADAPTIVE OPTICS

MS-12847

### ADAPTIVE RADAR

MS-12674

### ADAPTIVE SIGNAL PROCESSING

JA-7536, MS-12564, MS-12889,  
MS-12926

### AIRBORNE EARLY WARNING RADAR

MS-12520

### AIRBORNE LASER RADAR

MS-12847, MS-12848, MS-12849

### AIRBORNE RADAR

MS-12212, MS-12290, MS-12535,  
MS-12687, MS-12895, MS-12926

### AIRBORNE SENSORS

MS-12540

### AIRBORNE SURVEILLANCE

JA-7442, MS-12677

### ALGORITHMS

TR-1044, JA-7418, JA-7463, MS-12253,  
MS-12394, MS-12466, MS-12520,  
MS-12640, MS-12792

### ALL OPTICAL NETWORKS

JA-7236, JA-7555, MS-12427, MS-12428,  
MS-12665

### ALL OPTICAL SWITCHING

JA-7562, MS-12725

### ALUMINUM GALLIUM ARSENIDE

### ANTIMONIDE

JA-7546

### AM-FM SIGNALS

MS-12979

### ANALOG LINKS

JA-7425

### ANALOG TO DIGITAL CONVERTERS

MS-12792

### ANGLE OF ARRIVAL

MS-12877

### ANTENNA ARRAYS

JA-7443, MS-12791

### ANTENNA DESIGN

MS-12791

### ANTENNA THEORY

MS-13056

### ANTIMONIDES

MS-11835

## Subject Index

ARGON LASER  
JA-7455

ARRAY SIGNAL PROCESSING  
JA-7463

ATMOSPHERIC COMPENSATION  
MS-12726, MS-12847, MS-12848

ATMOSPHERIC MEASUREMENTS  
TR-1049

ATMOSPHERIC SOUNDING  
MS-12817

AUTOMATIC PROTECTION SWITCHING  
MS-12668

AUTOMATIC TARGET RECOGNITION  
JA-7452, MS-11944A, MS-12402A,  
MS-12524, MS-12560B, MS-12723

BALLISTIC MISSILE DEFENSE  
MS-12848, MS-12849

BANDWIDTH EXPANSION  
MS-12528

BATTLEFIELD AWARENESS AND DATA  
DISSEMINATION  
TR-1039

BATTLEFIELD COMMUNICATIONS  
JA-7442

BEAMFORMER  
JA-7595

BEAMFORMING  
MS-12799

BINARY INTEGRATION  
JA-7427

BROADBAND  
MS-12877

BROADBAND NETWORKS  
MS-12336, MS-13218

BROMINE  
JA-7533

BUFFERS  
JA-7500

CALIBRATION  
JA-7595, MS-12781, MS-12832,  
MS-12835

CANCER  
JA-7468A

CATHODES  
JA-7426, JA-7469

CHARGE COUPLED DEVICES  
JA-7571, MS-11842, MS-12538,  
MS-12637, MS-12794, MS-12975

CHEMICAL SENSORS  
MS-12538

CHEMICAL VAPOR DEPOSITION  
MS-12562

CIRCUIT SWITCHING  
JA-7555

CIRCULAR POLARIZATION  
JA-7579

CLASSIFIER PERFORMANCE  
MS-12560B

CLUTTER  
JA-7460, MS-12687, MS-12723,  
MS-12926, MS-12931

## Subject Index

CMOS  
JA-7479, JA-7504

CO-CHANNEL INTERFERENCE  
JA-7578

COMMUNICATION NETWORKS  
MS-13218

COMMUNICATIONS  
JA-7501, MS-12724

COMPRESSIVE RECEIVERS  
JA-7504

COMPUTATION  
JA-7427

COMPUTER ARCHITECTURE  
MS-13150

CONSTANT FALSE ALARM RATE  
MS-12889

CONTACT RESISTANCE  
JA-7479

CONTINUOUS PHASE MODULATION  
MS-13130

CONTINUOUS WAVE LASERS  
JA-7546, MS-13075

COUNTERMEASURES  
MS-12428

COVARIANCE  
JA-7595

CRAMER-RAO BOUND  
JA-7463, MS-12877

CRYPTOGRAPHY  
MS-12427, MS-12943

CRYSTAL GROWTH  
JA-7529

DATA ANALYSIS  
TR-1049

DATA FUSION  
MS-12402A

DECODERS  
TR-1039

DEMODULATION  
MS-12159, MS-12792

DETECTION  
JA-7427, MS-12290, MS-12665

DEVICES  
JA-7485

DIAMOND GRIT  
JA-7426

DIAMOND SURFACE EMISSION CATHODES  
JA-7469, JA-7469A

DIELECTRIC LAYERS  
JA-7547

DIFFRACTIVE OPTICS  
JA-7515

DIGITAL RADAR RECEIVERS  
MS-12535

DIGITAL SIGNAL PROCESSING  
JA-7504, MS-13150

DIODE LASERS  
JA-7360, MS-11835

DIODE PUMPED LASERS  
JA-7551

## Subject Index

DIODE PUMPING  
MS-12735

DIRECTION FINDING  
JA-7443, MS-12671

DOPPLER EFFECT  
JA-7460

DOPPLER RADAR  
TR-1049

DOPPLER WARPING  
MS-12520

EARLY WARNING RADAR  
MS-12535

EDGE DETECTION  
MS-12251, MS-12664

EDGE ROUGHNESS  
MS-12696

EIGENVALUES  
MS-13129

ELECTRIC CURRENTS  
JA-7426

ELECTROMAGNETIC PROPAGATION  
MS-12212

ELECTROMAGNETIC SCATTERING  
MS-12212, MS-12449B

ELECTRON EMISSION  
JA-7469, JA-7469A

ELECTRONIC MESSAGING  
MS-12253

EMISSION WAVELENGTH  
JA-7531

EMITTER LOCATION SYSTEM  
TR-1046

EMITTERS  
JA-7442

EPITAXIAL LAYERS  
MS-12488

EPITAXY  
JA-7546

ERBIUM  
JA-7514

ERBIUM DOPED FIBER AMPLIFIER  
JA-7579

ERROR ANALYSIS  
MS-12726

ERROR CONTROL CODING  
TR-1039

ESTIMATION THEORY  
TR-1046

EXCIMER LASER  
MS-12495

EXCIMER LASER LITHOGRAPHY  
MS-12234

EXCITONS  
JA-7455

FADING  
MS-12528

FALSE ALARM  
JA-7460, MS-12376A

FIBER LASERS  
JA-7461

## Subject Index

FIELD EFFECT TRANSISTORS  
JA-7561

FIELD EFFECTS  
MS-12251

FIGURE OF MERIT  
MS-12577

FILTERS  
MS-12417A

FINITE DIFFERENCE TIME DOMAIN  
MS-13056

FINITE IMPULSE RESPONSE  
TR-1046

FLAT PANEL DISPLAYS  
MS-12421

FOURIER TRANSFORM  
MS-12817

FOURIER TRANSFORM INFRARED  
MS-12795

FRONT END PROCESSOR  
MS-12792

FUNCTIONAL TEMPLATE  
CORRELATION  
MS-12524

GAIN FIGURE  
JA-7425

GALLIUM ANTIMONIDE  
JA-7546, MS-12846

GALLIUM ARSENIDE  
JA-7533

GALLIUM INDIUM ARSENIDE  
ANTIMONIDE  
JA-7495, JA-7546, MS-12488

GALLIUM NITRIDE  
JA-7455, JA-7486, MS-11633

GATE ARRAYS  
JA-7426

GAUSSIAN PROCESS  
MS-13130

GEOSYNCHRONOUS SATELLITES  
MS-12793

GLOBAL BROADCAST SERVICE  
TR-1039

GLOBAL POSITIONING SYSTEM  
MS-11748

GOES IMAGER  
MS-12781, MS-12794

GOES SOUNDER  
MS-12795

GROUND CLUTTER  
MS-12394, MS-12677

GROUND PENETRATION  
MS-12111, MS-12540

HELIUM CADMIUM LASER  
JA-7455

HETERODYNE DETECTION  
MS-11995

HETERODYNE RECEIVER  
MS-12252A

## Subject Index

HIDDEN MARKOV MODEL  
JA-7436, MS-12417A

HIGH DATA RATE COMMUNICATIONS  
MS-12791

HIGH DEFINITION IMAGING  
MS-11944A

HIGH DEFINITION VECTOR IMAGING  
MS-12663

HIGH POWER  
MS-12846

HIGH RESISTIVITY  
JA-7561, MS-12637

HOUGH TRANSFORM  
MS-12524

HYDRIDE VAPOR PHASE EPITAXY  
JA-7564, MS-11633

HYPERTHERMIA  
JA-7468A

IMAGE PROCESSING  
MS-11944A, MS-12402A, MS-12696

IMAGE RECONSTRUCTION  
JA-7499

IMAGE RESOLUTION  
JA-7452, MS-12560B

IMAGERY  
JA-7418

IMAGING ARRAYS  
MS-12252A

IMAGING SPECTROMETERS  
MS-12637, MS-12712A, MS-12726

IMPEDANCE MATCHING  
JA-7425

IMPURITY ELECTRON STATES  
JA-7486

INDIUM GALLIUM ARSENIDE  
JA-7505

INFRARED DETECTORS  
MS-11995

INFRARED IMAGERY  
MS-12975

INFRARED LASERS  
MS-12846

INFRARED SPECTROSCOPY  
JA-7486

INFRARED SYSTEMS  
MS-12793

INTEGRATED CIRCUIT FABRICATION  
JA-7556

INTEGRATED CIRCUITS  
MS-12538

INTERFERENCE  
JA-7442, MS-12290, MS-12564,  
MS-12674, MS-12677, MS-12931

INTERFEROMETRY  
JA-7562, MS-12692, MS-12725,  
MS-12795

ION BEAM ETCHING  
JA-7533

JAMMERS  
MS-12674, MS-12804, MS-12931



## Subject Index

JAMMING JA-7536, MS-12687, MS-12926	METEOROLOGICAL CONDITIONS MS-11748
L-BAND RADAR JA-7460	METEOROLOGICAL SATELLITES MS-12794
LADAR MS-12524	METROLOGY MS-12696
LASER INDUCED DAMAGE MS-12898	MICROELECTRONIC DEVICES JA-7496
LASER MATERIALS PROCESSING MS-12562	MICROELECTRONICS MS-12813
LASERS JA-7465, JA-7498	MICROLENS ARRAYS JA-7465
LATTICE MATCHED MS-12488	MICROMACHINING MS-12252A
LINEAR ANTENNA ARRAYS MS-12520	MICROMECHANICS MS-12421
LITHOGRAPHY JA-7498	MICROOPTICS JA-7515
LOCAL AREA NETWORKS MS-12594A	MICROSTRIP ANTENNAS JA-7481
MACHINE TRANSLATION JA-7501	MICROWAVE DEVICES MS-12793
MAINBEAM JAMMER JA-7536	MICROWAVE FREQUENCY JA-7614
MASSIVELY PARALLEL PROCESSING MS-12895	MICROWAVE PHASE SHIFTERS JA-7481
MAXIMUM LIKELIHOOD TR-1046, MS-12804	MICROWAVE SURFACE IMPEDANCE JA-7446
METAL DIELECTRICS JA-7547, MS-13056	MICROWAVES JA-7425

## Subject Index

MIDINFRARED LASERS  
JA-7524, JA-7546, MS-11947A,  
MS-12735

MINE DETECTION  
MS-12111

MINIMUM SHIFT KEYED  
MS-13130

MODELING  
JA-7514

MODULATORS  
MS-12692

MOLECULAR BEAM EPITAXY  
JA-7531, JA-7546, MS-11835,  
MS-11947A, MS-12577

MONOLITHIC MICROWAVE INTEGRATED  
CIRCUITS  
MS-12791

MOVING TARGET INDICATORS  
JA-7460

MULTICASTING  
MS-12594A

MULTIPATH  
TR-1046

MULTIPATH CHANNELS  
MS-12564

MULTIPATH PROCESSING  
MS-12804

MULTIPLE QUANTUM WELLS  
JA-7360, MS-11995, MS-12577

MULTIPLEXING  
MS-13218

MULTISPECTRAL IMAGING  
MS-12712A, MS-12975

NANOTECHNOLOGY  
MS-12538

NARROW GAP SEMICONDUCTOR LASERS  
JA-7524

NARROWBAND  
MS-12877

NEODYMIUM:YTTRIUM ALUMINUM  
GARNET LASERS  
MS-12692

NETWORK SECURITY  
MS-12943

NEURAL NETWORKS  
JA-7436, MS-12979

NIGHT VISION  
MS-12975

NOISE  
JA-7425, MS-12159, MS-12437,  
MS-12692

NONLINEARITY  
MS-12159

NULLING  
MS-12674

OPTICAL AMPLIFIERS  
MS-12725

OPTICAL COMMUNICATIONS  
MS-12427, MS-12644

OPTICAL FIBER COMMUNICATIONS  
MS-12159

## Subject Index

OPTICAL FIBER NETWORKS  
JA-7514, MS-12668, MS-13218

OPTICAL FIBERS  
JA-7500

OPTICAL IMAGING  
TR-1045

OPTICAL INTERCONNECTIONS  
JA-7481

OPTICAL LINKS  
JA-7425

OPTICAL MATERIALS  
JA-7498

OPTICAL MODULATION  
MS-12159

OPTICAL NETWORKS  
MS-12336

OPTICAL PATH LENGTH  
JA-7483

OPTICAL PUMPING  
JA-7524, MS-12735

OPTICAL SIGNALS  
JA-7579

OPTICAL STORAGE  
JA-7461

OPTICAL SWITCHES  
JA-7562

OPTICAL TRANSFER FUNCTION  
MS-12781

OPTOELECTRONIC DEVICES  
JA-7481, JA-7529

ORGANOMETALLIC VAPOR PHASE  
EPITAXY  
JA-7360, JA-7495, JA-7529, MS-12488

ORTHOGONAL SIGNALING  
MS-12889

OSCILLATORS  
JA-7485

PACKET SWITCHING  
JA-7500, MS-12943

PATTERN TRANSFER  
JA-7515

PELLICLES  
MS-12495, MS-12898

PERFORMANCE  
MS-12834

PHASE MODULATION  
JA-7500

PHASE NOISE  
JA-7485

PHASED ARRAYS  
JA-7468A, JA-7481, MS-12251

PHOTOCONDUCTORS  
MS-13075

PHOTOLITHOGRAPHY  
JA-7496, MS-12234, MS-12813

PHOTOLUMINESCENCE  
JA-7455

PHOTONIC CRYSTALS  
JA-7547, MS-13056

## Subject Index

PHOTONICS  
JA-7425

PLANAR ARRAYS  
JA-7478

PLASMA ETCHING  
MS-12664

POLYMERS  
JA-7570

PRECIPITATION  
MS-11748, MS-12394

PROPAGATION  
MS-12394

PROTOCOLS  
MS-12943

PSYCHOACOUSTICS  
MS-12979

PULSE CIRCUITS  
JA-7504

PULSE DOPPLER RADAR  
MS-12889

PULSE MODULATION  
MS-13130

QUANTUM EFFICIENCY  
JA-7571

QUANTUM WELL DIODE LASERS  
JA-7531, MS-11947A

QUANTUM WELL LASERS  
JA-7524, JA-7546, JA-7551, JA-7558

QUANTUM WELLS  
JA-7546, MS-11835, MS-11995

RADAR CROSS SECTIONS  
MS-12111

RADAR DATA EXPLOITATION  
JA-7474

RADAR IMAGING  
JA-7578

RADAR SIGNAL PROCESSING  
MS-12466

RADAR SIGNATURE  
TR-1045, JA-7474

RADIOMETRY  
JA-7478, MS-12781

RADIOSONDE  
MS-11748

RANGE IMAGERY  
MS-12524

REAL TIME PROCESSING  
MS-12975

REFLECTED SIGNAL  
MS-12674

REFRACTIVE INDEX  
JA-7483

REFRACTIVE MICROLENSES  
JA-7465

REFRACTIVE OPTICS  
JA-7515

RELAXATION OSCILLATORS  
JA-7485

REMOTE SENSING  
TR-1045, MS-12726, MS-12817,  
MS-12832, MS-12835

## Subject Index

RESIDENT SPACE OBJECT  
MS-13011

RESISTS  
JA-7498, JA-7570, MS-12664

RESOLUTION  
JA-7418

RESONANT TUNNELING DIODES  
JA-7485, JA-7512, JA-7561

SATELLITE COMMUNICATIONS  
MS-12253

SCATTERING  
JA-7512

SCHEDULING  
MS-12594A

SECURITY OF DATA  
MS-12428, MS-12665

SEMICONDUCTOR DEVICE FABRICATION  
JA-7558

SEMICONDUCTOR LASERS  
JA-7546, JA-7551, JA-7558, MS-12846

SEMICONDUCTOR QUANTUM WELLS  
MS-12562

SEMICONDUCTORS  
JA-7469A, JA-7505, MS-12735

SENSOR ARRAYS  
MS-12663, MS-12671, MS-12687

SENSOR FUSION  
MS-12975

SENSORS  
TR-1044

SHIFT REGISTERS  
MS-12427

SIDELOBE ANTENNAS  
MS-12799

SIGNAL PROCESSING  
MS-12535, MS-12817, MS-12895

SILICON  
MS-12252A, MS-12538

SILICON ON INSULATOR  
JA-7479, JA-7504

SILICON SUBSTRATES  
JA-7556

SOFT X-RAY ASTRONOMY  
MS-11842

SOIL  
MS-12111

SOLID STATE  
JA-7483

SPACE DEBRIS  
TR-1045, MS-13011

SPACE SURVEILLANCE  
MS-11842, MS-13011

SPACE TIME ADAPTIVE PROCESSING  
MS-12290, MS-12466, MS-12520,  
MS-12677

SPECTRAL DISTRIBUTION  
MS-12637

SPECTRAL MAGNITUDE  
MS-12640

SPECTRAL RESOLUTION  
MS-12834

## Subject Index

### SPECTROMETERS

MS-12817, MS-12832, MS-12834,  
MS-12835

### SPECTROSCOPY

JA-7564

### SPEECH CORPUS

JA-7436

### SPEECH RECOGNITION

MS-12417A, MS-12640

### STOPBANDS

JA-7547

### STRIPLINE RESONATOR

JA-7446

### SUBSPACE

MS-12671

### SUBSTRATES

MS-12488

### SUPERRESOLUTION

JA-7452, JA-7463, JA-7474, JA-7478,  
JA-7578, MS-11944A, MS-12663

### SURFACE EMITTING LASERS

JA-7533

### SURFACE IMAGING

MS-12664

### SURFACE IMPEDANCE

JA-7614

### SURFACE REFLECTANCE

MS-12726

### SURVEILLANCE RADAR

JA-7536

### SWITCHING NETWORKS

MS-12668

### SYNTHETIC APERTURE RADAR

JA-7452, JA-7499, MS-12111,  
MS-12402A, MS-12540, MS-12560B,  
MS-12663, MS-12723

### TAPERED LASERS

JA-7546, MS-12562

### TARGET DETECTION

JA-7427, MS-12376A, MS-12540,  
MS-12926

### TARGET DISCRIMINATION

MS-12723

### TARGET RECOGNITION

JA-7499, MS-12663

### TARGET TRACKING

TR-1044

### TARGETING

JA-7474

### TELEPHONE SETS

MS-12640

### TELESCOPES

MS-12712A

### TERAHERTZ SPECTROSCOPY

MS-13075

### TERRAIN

MS-12449B, MS-12931

### THERMOELECTRICS

MS-12577

### THERMOPHOTOVOLTAICS

JA-7495, JA-7505

## Subject Index

THICK FILMS  
MS-11633

THICKNESS MEASUREMENT  
JA-7556

THIN FILMS  
JA-7446, JA-7614

TIME DIVISION MULTIPLEXING  
JA-7236, JA-7461, JA-7562

TRACKING  
MS-12848, MS-12849

TRANSDUCTORS  
MS-12979

TRANSIENT RESPONSE  
JA-7514

TRANSLATION SYSTEMS  
JA-7501

TRANSMISSION LINES  
MS-13075

TRANSMISSION NETWORKS  
MS-12943

TREE DATA STRUCTURES  
MS-12895

TUNNELING  
JA-7469

TURBULENCE  
TR-1049

ULTRAWIDEBAND  
JA-7474

UNEXPLODED ORDINANCE  
MS-12111

VECTOR QUANTIZATION  
JA-7499

VERY HIGH FREQUENCY  
TR-1049

VIRTUAL ARRAYS  
MS-12251

VULNERABILITIES  
MS-12428

WATER VAPOR  
MS-11748

WAVEFORMS  
JA-7443, MS-13130

WAVEGUIDES  
MS-12252A

WAVELENGTH CONVERSION  
MS-12724

WAVELENGTH DIVISION MULTIPLEXING  
JA-7236, JA-7555, MS-12336,  
MS-12427, MS-12594A, MS-12644

WEATHER SENSING  
MS-12793

WIDEBAND GAP-SEMICONDUCTORS  
JA-7486

WIDEBAND NULLING  
MS-12799

WIDEBAND OPTICAL NETWORKS  
MS-12724

WIDEBAND RADAR  
JA-7418

## Subject Index

WIDEBAND SIGNALS  
MS-12437

WIENER FILTERING  
MS-12437

WORD SPOTTING  
JA-7436

X-RAY SPECTROSCOPY  
MS-12637

X-RAYS  
JA-7571

YTTRIUM ALUMINUM GARNET  
JA-7483

193-NM LITHOGRAPHY  
JA-7570, MS-12495, MS-12898

193-NM PHOTOLITHOGRAPHY  
JA-7496



# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 31 December 1998		3. REPORT TYPE AND DATES COVERED Bibliography	
4. TITLE AND SUBTITLE  Unclassified Publications of Lincoln Laboratory — Volume 24				5. FUNDING NUMBERS  C — F19628-95-C-0002	
6. AUTHOR(S)  Publications Office and Library & Information Services					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  Lincoln Laboratory, MIT 244 Wood Street Lexington, MA 02420-9176				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)  HQ Air Force Materiel Command AFMC/STSC Wright-Patterson AFB, OH 45433-5001				10. SPONSORING/MONITORING AGENCY REPORT NUMBER  ESC-TR-98-049	
11. SUPPLEMENTARY NOTES  None					
12a. DISTRIBUTION/AVAILABILITY STATEMENT  Approved for public release; distribution is unlimited.				12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words)  <p>Volume 24 of Unclassified Publications of Lincoln Laboratory lists reports published from 1 January to 31 December 1998, as well as updated information on earlier publications.</p> <p>Documents listed herein are generally no longer available from Lincoln Laboratory. Qualified Defense Technical Information Center (DTIC) users may purchase copies through normal DTIC channels. Others may purchase photocopies or microfiche from the U.S. Department of Commerce, National Technical Information Service, Springfield, Virginia 22161. When ordering, the six-digit AD number should be cited.</p> <p>Subscriptions of the <i>MIT Lincoln Laboratory Journal</i> are free of charge, but provided only to qualified recipients (government employees and contractors, libraries, university faculty, and R&amp;D laboratories).</p>					
14. SUBJECT TERMS  Bibliography				15. NUMBER OF PAGES 62	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unclassified		